

ABSTRACT

The effective coherence of an undulator beamline can be tailored to projection lithography requirements by using a simple single moving element and a simple stationary low-cost spherical mirror. The invention is particularly suited for use in an illuminator device for an optical image processing system requiring partially coherent illumination. The illuminator includes: (i) source of coherent or partially coherent radiation which has an intrinsic coherence that is higher than the desired coherence; (ii) a reflective surface that receives incident radiation from said source; (iii) means for moving the reflective surface through a desired range of angles in two dimensions wherein the rate of the motion is fast relative to integration time of said image processing system; and (iv) a condenser optic that re-images the moving reflective surface to the entrance plane of said image processing system, thereby, making the illumination spot in said entrance plane essentially stationary.